REMARKS

The Office Action mailed February 26, 2003, has been received and carefully reviewed. Reconsideration and withdrawal of the rejections of the claims of the above-identified application is respectfully requested. Claim 13 has been amended to remove a duplicated marker. No new matter has been added.

Rejections Under 35 U.S.C. §103(a)

Claims 1-4, 6-11 and 13-17 are rejected as being obvious over Hajek et al. (US 5,340,719) in view of Fodstad et al. (WO 94/07139) and O'Briant (Cancer 68(6):1272, 1991) for reasons of record in paper No. 22.

In response to Applicant's previous arguments, the Examiner maintains that Hajek et al. teach that under a normal cell concentration of 4-11,000 cells per microliter, cell clumping does not occur when using different particles with different associated antigens.

Hajek et al. is directed to a method of screening cells to identify the morphology and selected characteristics. Hajek et al. specifically teaches the advantages of morphological examination of cells by making smears and using various stains (column 5, line 52 through column 6, line 9). Hajek et al. also teaches that clumping occurs when a sample contains a high number of cells positive for a particular antigen, and in blood samples having white blood cell counts (WBC) of 40,000 - 50,000 cells or more per microliter (column 12, lines 17-49). Thus, one of ordinary skill in the art, upon reading Hajek et al. would expect that when a sample has a "normal" concentration of cells (4-11,000/ µl), the smear method of Hajek et al. provides a means for screening cells and determining their morphology by staining slides. However, based on the specific teaching of Hajek et al, one of ordinary skill in the art would expect that when the sample has a higher cell concentration, of 40-50,000 or more per microliter, the cells will clump, or rim in the tube, and will agglutinate on a slide. While Hajek et al. teach using the "rimming" phenomenon in the test tube, during the incubation or mixing phase, as "a fast screening procedure for high WBC counts" (column 12, lines 37-38), Hajek et al. do not

teach or suggest a way to identify, screen or determine morphology on cells in suspension, as is asserted by the Examiner. The only method of identifying or screening cells taught by Hajek et al. is by smearing the cells on a slide and viewing the slide.

The Examiner also asserts that Fodstad teaches 2-6 particles. Applicants respectfully disagree. The entire disclosure of Fodstad is directed to using one type of antibody bound to one type of particle. The last five lines of the first paragraph on page 4 of Fodstad are directed to providing ways of increasing the specificity, that is, to reduce the possibility of cross-reactions with non-target cells. One of ordinary skill in the art would recognize that, for increasing the specificity, the second set of antibodies would be directed to the same cells as the antibody-particle complexes, in order to increase the number of target cells detected. Thus, Fodstad teach a single type of antibody-particle complex for detecting a single type of target cell.

Regarding Fodstad's teaching that the method can be performed using cell suspension without interference from aggregation, one of ordinary skill in the art would know that the possibility of aggregation is very low in Fodstad's method compared to when using several types of particles. In the present method, different antibodies that might bind to antigens present in high concentrations on many cell types, and perhaps at a low level on non-target cells, are being used. These antibodies are coated onto different types of particles, each type having a different fluorescence. In the present method, therefore, a much higher number of particles with different antibodies and different fluorescent colors can bind to cells compared to the method of Fodstad. Therefore, the skilled artisan would expect problems with aggregation in the present method, and also with being able to distinguish different bound fluorescent particles, each representing expression of a particular marker antigen, from each other.

Applicants respectfully disagree with the Examiner's statements on page 5 of the Office Action. 1) Hajek et al. do not teach the identification of cells in suspension. They teach identifying cells only when the cells are smeared on slides and stained. The only cell suspension analyzing taught by Hajek et al. is that if the sample clumps in the test tube when the antibody-particle reagent is added, there is probably a high number of WBCs present in the sample. However, no identification of the type of cells in the

clumped cell suspension is taught. Fodstad only teach detection of a single type of cell using a single type of antibody-particle complex. 2-3) Fodstad teaches cell suspension analysis is rapid and simple when a single type of target cell is analyzed using a single type of antibody-particle complex. Applicant submits that one of ordinary skill in the art, upon reading Hajek et al. and Fodstad, would understand that cell suspension can be used with a single antibody-particle complex to detect and identify a single target cell type, and that two antibody-particle complexes can be used when the cells are smeared on slides and stained. However, there is no teaching or suggestion in either reference for performing the present method.

It is respectfully submitted that each of the presently pending claims is in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' representative at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332.5300

Date: May 27, 2003

Name: John J. Gresens
Reg. No.: 33,112
JJG/NJP